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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,751	07/30/2003	Nobuyoshi Sugahara	02910.000071.	6787

5514 7590 01/10/2005

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT PAPER NUMBER

1756

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/629,751

Applicant(s)

SUGAHARA ET AL.

Examiner

Christopher RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 3 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/1/03 11/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 1 October 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered for the foreign patents. No copies of the foreign documents have been submitted.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

Claim 10 is objected to because of the following informalities: there is an errant apostrophe after "to" in line 1 of claim 10. Appropriate correction is required.

Additionally, the Examiner notes that the language concerning the endothermic peak in claim 2 is redundant. Clarification is suggested.

Claim Rejections - 35 USC §§ 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-7, 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Higuchi *et al.* in US Patent 6,656,654.

Higuchi '654 discloses a toner having a combination of a linear with an acid value of 35 mgKOH/g and non-linear polyester with an acid value of 40 mg KOH/g (Examples 6 and 7). These toners have an average size of 7 microns and circularities of 0.938 and 0.50, respectively. The toner also include carbon black, a metallic compound of an oxycarboxylic acid, and a release agent.

The reference does not disclose the loss tangent characteristics of the instant claims. However, the specification indicates that the claimed loss tangent is related to the dispersion state of carbon black in the toner. The carbon black appears to have enhanced dispersion when the toner has acid values as specified (see spec. p. 4, l. 24 – p. 5, l. 18). The specification also indicates that the dispersibility of the carbon black is enhanced when there is an organometallic compound (spec. p. 5, l. 19 – 26). Further, the specification indicates that a

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releasing agent compound aids the dispersibility of the carbon black in the toner (spec. p. 5, l. 27 – p. 6, l. 10).

Higuchi has each of the requisite characteristics associated with enhanced carbon black dispersibility. Higuchi has a toner with acid values within the scope of the claims. Higuchi includes an organometallic compound as a charge control agent. Higuchi uses a release agent. Given these characteristics there is sufficient reason to believe that Higuchi inherently has the carbon black dispersion desired for the instant invention and, in turn, inherently has the loss tangent specified.

Claims 1, 2, 5-7, and 9-12 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Higuchi *et al.* in US Patent Application Publication 2003/0165760.

Higuchi '760 discloses in Example 9 a toner having a binder resin, a carbon black colorant, a salicylic acid metal salt charge control agent, and a release agent. The binder resin is a mixture of a non-linear polyester having a hydroxyl value of 35.1 mgKOH/g and an acid value of 10.3 mgKOH/g, a linear polyester having a hydroxyl value of 34 mgKOH/g and an acid value of 2.1 mgKOH/g, and a hybrid resin having a polyester unit and a vinyl unit with a hydroxyl value of 25.1 mgKOH/g and an acid value of 24.5 mgKOH/g (¶¶ [0130] – [0135], [0163], [0166], & [0167]). As seen in Table 1, toner 10 has a volume average particle diameter of 7.0 μm . This would appear to be the same as the weight-average particle diameter because the toner particles appear to be substantially homogeneous in their composition with respect to each other. The release agent used in the example is a modified wax having styrene and methylmethacrylate grafted to a polyethylene backbone. Higuchi teaches that the toner has a circularity of from 0.91 to 0.96 (¶ [0119]).

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The reference does not disclose the loss tangent characteristics of the instant claims. However, the specification indicates that the claimed loss tangent is related to the dispersion state of carbon black in the toner. The carbon black appears to have enhanced dispersion when the toner has acid values and hydroxyl values as specified (see spec. p. 4, l. 24 – p. 5, l. 18). The specification also indicates that the dispersibility of the carbon black is enhanced when there is an organometallic compound (spec. p. 5, l. 19 – 26). Further, the specification indicates that a releasing agent compound aids the dispersibility of the carbon black in the toner (spec. p. 5, l. 27 – p. 6, l. 10).

Higuchi has each of the requisite characteristics associated with enhanced carbon black dispersibility. Higuchi has a toner with acid and hydroxyl values within the scope of the claims. Higuchi includes an organometallic compound as a charge control agent. Higuchi uses a release agent. Given these characteristics there is sufficient reason to believe that Higuchi inherently has the carbon black dispersion desired for the instant invention and, in turn, inherently has the loss tangent specified. The toner would also appear to have a maximum endothermic peak within the range specified for claim 2 because of the T_g values for the resins at 61.5 °C, 60.3 °C, and 59.5 °C (¶¶ [0130] – [0135]).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claims 1, 2, 4-7, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi *et al.* in US Patent Application Publication 2002/0081513 in view of Higuchi in US Patent 6,656,654.

Higuchi '513 discloses in Example 2 a toner having a binder resin, a carbon black colorant, a salicylic acid metal salt charge control agent, and a release agent. The binder resin is a mixture of a non-linear polyester having a hydroxyl value of 35.1 mgKOH/g and an acid value of 16.3 mgKOH/g and a linear polyester having a hydroxyl value of 34 mgKOH/g and an acid value of 2.1 mgKOH/g (¶¶ [0201] – [0203]; [0217]). This toner has a volume average particle diameter of 6.4 µm (Table 1). This would appear to be the same as the weight-average particle diameter because the toner particles appear to be substantially homogeneous in their composition with respect to each other. Example 9 discloses a toner with an average diameter of 6.6 microns and that also includes a hybrid resin having a polyester unit and a vinyl unit with a hydroxyl value of 25.1 mgKOH/g and an acid value of 24.5 mgKOH/g.

The reference does not disclose the loss tangent characteristics of the instant claims. However, the specification indicates that the claimed loss tangent is related to the dispersion state of carbon black in the toner. The carbon black appears to have enhanced dispersion when the toner has acid values and hydroxyl values as specified (see spec. p. 4, l. 24 – p. 5, l. 18). The specification also indicates that the dispersibility of the carbon black is enhanced when there is an organometallic compound (spec. p. 5, l. 19 – 26). Further, the specification indicates that a releasing agent compound aids the dispersibility of the carbon black in the toner (spec. p. 5, l. 27 – p. 6, l. 10).

Higuchi '513 has each of the requisite characteristics associated with enhanced carbon black dispersibility. Higuchi '513 has a toner with acid and hydroxyl values within the scope of the claims. Higuchi includes an organometallic compound as a charge control agent. Higuchi uses a release agent. Given these characteristics there is sufficient reason to believe that Higuchi inherently has the carbon black dispersion desired for the instant invention and, in turn, inherently has the loss tangent specified.

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Higuchi '513 does not disclose the circularity of the toner. Higuchi '654 discloses a toner with a preferred circularity of 0.940 or more. This circularity improves toner transfer because non-transfer spots in a line image are effectively reduced (col. 6, l. 1-12). This characteristic is effective with a toner having a size of from 4 to 8 microns (col. 5, l. 29-37) and where the toner contains linear and non-linear polyesters (Abstract & examples). Exemplified circularities are 0.950 (see Example 7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner of Higuchi '513 with a circularity of 0.940 or more, such as 0.950, because this circularity gives improved transfer characteristics. These characteristics would be of interest to the artisan considering Higuchi '513, which is specifically concerned with the transfer and fixing characteristics of the toner (§§ [0040]. The artisan would have been expected to optimize the size of the carbon black so that it is properly dispersed in the toner binder resin given the disclosure of sizes such as 0.1 microns as effective for other colorants (§ [0132]).

Allowable Subject Matter

Claims 3 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
6 January 2005


CHRISTOPHER RODEE
PRIMARY EXAMINER